

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



10/552831

(43) International Publication Date  
28 October 2004 (28.10.2004)

PCT

(10) International Publication Number  
WO 2004/093313 A3(51) International Patent Classification<sup>7</sup>:

H03G 3/30

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(21) International Application Number:

PCT/IB2004/001073

(22) International Filing Date: 22 March 2004 (22.03.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
03101059.8 17 April 2003 (17.04.2003) EP

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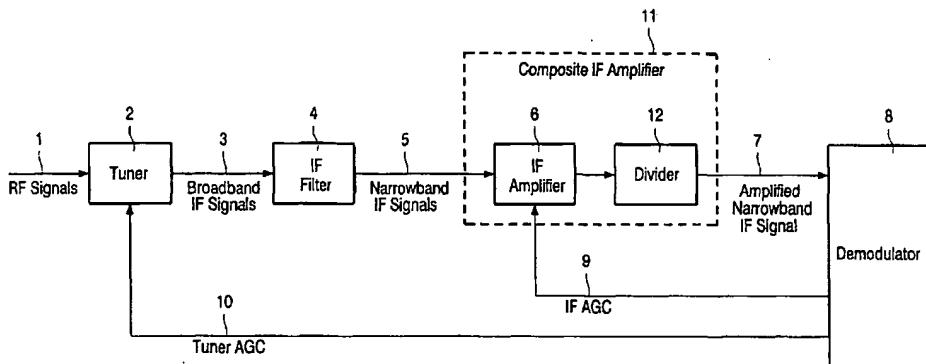
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

## Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

[Continued on next page]

(54) Title: FRONT-END SENSITIVITY BOOSTER



WO 2004/093313 A3

(57) **Abstract:** The invention relates to a method for increasing the sensitivity of a chain of amplifiers that comprises the steps of amplifying a signal by means of a first amplifier with a gain factor  $A_1 = A_{1,m} * \Delta A_1$ , where  $A_{1,m}$  denotes a constant gain factor and  $A_1$  denotes a gain factor variation with  $1 \leq \Delta A_{1,min} \leq \Delta A_1 \leq \Delta A_{1,max}$ , further amplifying the signal by means of a second amplifier with a controllable gain factor  $A_2 \leq A_{2,max}$ , where variations  $\Delta A_1$  of the gain of the first amplifier are compensated by reducing the gain  $A_2$  of the second amplifier, so that the difference between the chain gain factor  $A_C = A_1 * A_2$  and a target chain gain factor  $A_T \leq A_{T,max}$  becomes zero. To solve the object of the invention to provide a method for increasing the sensitivity of a chain of amplifiers that suffers from gain factor variations, it is proposed that that the signal at the output of the second amplifier is additionally fed into a divider that applies a fixed factor  $A_3 \leq 1$  to its input, that variations  $\Delta A_1$  of the gain factor  $A_1$  of the first amplifier as well as the fixed factor  $A_3$  are at least partially compensated by the gain factor  $A_2$  of the second amplifier, so that the difference between the chain gain factor  $A_C' = A_1 * A_2 * A_3$  and the target chain gain factor  $A_T$  becomes minimum, and that the fixed factor  $A_3$  is chosen so that there exist at least some combinations of values  $\Delta A_1$  and  $A_T$  for which said difference can be forced to zero, and some combinations of values  $\Delta A_1$  and  $A_T$ , for which said difference can no longer be forced to zero due to the limitation  $A_2 \leq A_{2,max}$ . The invention further relates to a device for increasing the sensitivity of a chain of amplifiers.



**(88) Date of publication of the international search report:**  
16 December 2004

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/IB2004/001073

**A. CLASSIFICATION OF SUBJECT MATTER**  
IPC 7 H03G3/30

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)  
IPC 7 H03G H03F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, INSPEC, COMPENDEX

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0 838 896 A (NIPPON ELECTRIC CO) 29 April 1998 (1998-04-29) cited in the application abstract column 7, line 32 - column 12, line 44; figure 5 -----	1-10
A	EP 0 797 299 A (NIPPON ELECTRIC CO) 24 September 1997 (1997-09-24) abstract column 4, line 30 - column 5, line 32; figure 1 column 5, line 37 - column 7, line 50; figures 2,3 column 11, line 46 - column 12, line 3; figures 7A,7B -----	1-10
		-/-

Further documents are listed in the continuation of box C.

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Date of the actual completion of the international search

11 October 2004

Date of mailing of the international search report

20/10/2004

Name and mailing address of the ISA

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## INTERNATIONAL SEARCH REPORT

International Application No

PCT/IB2004/001073

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**INTERNATIONAL SEARCH REPORT**

Information on patent family members

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PCT/IB2004/001073

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